

ON SOME MAMMALS COLLECTED BY DR. E. MODIGLIANI  
IN SIPORA, MENTAWEI ISLANDS  
BY OLDFIELD THOMAS

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Among the islands whose Mammalogy has been hitherto totally unknown, the Mentawai Islands, west of Sumatra, have occupied a somewhat conspicuous place, especially since Engano and Pulo Nias, thanks to the collections of Dr. Modigliani, and the Natuna Islands, to those of Mr. Everett, have been removed from that category. Dr. Modigliani having now followed up his previous explorations by an investigation into the Fauna of Sipora<sup>(1)</sup>, the second largest island of the Mentawai group, I have felt great pleasure in being privileged to work out the Mammals he collected there.

The specimens have all been presented by Dr. Modigliani to the Museo Civico, Genoa, to whose authorities, the Marquis G. Doria and Dr. R. Gestro, I owe thanks both personally for the pleasure I have had in working them out, and also for the generosity with which they have ceded to the British Museum a duplicate set of specimens, including a co-type of each of the species here described as new.

The Mammals as a whole prove to be of remarkable and quite unexpected interest, as judged by the amount of peculia-

(1) This island has been variously called Sipora, Sikobou, or Sereinu. The first of these names is that generally used in German and English maps, the second I find as an alternative to the first in Stenfoort and Siethoff's excellent Dutch Atlas of the East Indian Archipelago, while the third occurs, also as an alternative to the first, on Dr. Modigliani's labels.

rity they show. For of twenty species, of which eight are bats and two (*Macacus*, *Mus rattus*) may have been of human importation, no less than five, that is to say *half* of the indigenous terrestrial species, are altogether peculiar (<sup>1</sup>), four being new. And even of the other five, two (*Paradoxurus* sp., *Sciuropterus aurantiacus*?) are only referred to older species provisionally, owing to Dr. Modigliani's specimens of them being immature or otherwise insufficient for proper determination. There are therefore only left three non-volant species (*Tupaia ferruginea hypochrysa*, *Pteromys nitidus* and *Mus rajah*) which are referred with any confidence to forms known elsewhere, and it may be noted that two of these three are common and widely distributed Malay animals, the other being Javan.

Two things about the peculiar species are worthy of note. One is how very distinct they all are from forms known elsewhere, no one being only barely distinct; indeed, far from there having been any difficulty in distinguishing them, the puzzle has rather been to find species to which the four new ones might be suitably compared for diagnostic purposes.

The second point is the great prevalence of sombre colouration among them, a characteristic here attained entirely without any mixture of the melanism commonly so frequent in insular areas. The *Sciuropterus* is wholly dark brownish black, *Sciurus melanogaster* is unique in having a black belly, *S. fraterculus* is a very dull coloured species, as is *Mus siporanus*, while the *Semnopithecus*, belonging to a group in which the normal colour is brightly contrasted grey and white, has done its best in the same direction by darkening its back and tail to black and its belly to dark rufous, even though it has still retained the white head and genital markings.

With the exception of a few passing references by earlier authors, our whole knowledge of the Mammalogy of the chain of islands running parallel with the west coast of Sumatra is

(<sup>1</sup>) On the assumption that the Tenasserim locality of *Semnopithecus potenziani* is erroneous. see below.

due to Dr. Modigliani, he having first investigated Pulo Nias <sup>(1)</sup>, then Engano <sup>(2)</sup> and now Sipora.

He is therefore the more to be congratulated on the highly interesting results of this last expedition, which quite put in the shade the somewhat disappointing ones of the Nias and Engano collections.

I trust that Dr. Modigliani may next time be able to crown this series of explorations with a visit to the largest island of all, Siberut, just north of Sipora, where he will no doubt find further materials for the study of the Fauna of this interesting series of islands, whose true relationship we are at present very far from understanding.

With regard to the several interesting theories <sup>(3)</sup> as to the origin of the Fauna of the Mentawai chain it may be thought that the worker out of the Mammals of Sipora should express an opinion. So far then as I can venture to do so, I may say that the present collection does not show the very slightest special relationship to Sumatra <sup>(4)</sup> and therefore lends weight to the view that the chain is the remnant of a long peninsula or island, similar in shape to but separate from, the Malay Peninsula or Sumatra. Further than this I cannot at present go, mainly because we know so little of the small terrestrial mammals of the other islands of the chain, those of the Nicobars being almost unknown, and of Simalu, Siberut and Pageh entirely so, while even in Nias and Engano Dr. Modigliani's collections consisted mainly of bats. Still the few indications there are, such as the relations to each other of *Pteropus nicobaricus*, *modiglianii* and *natalis*, of *Mus siporanus* and *macleari*, show that the mammals, like other animals, show a general similarity

(1) See Modigliani, Ann. Mus. Civ. Genova (2) VII, p. 238, 1889. — 15 species, of which 8 were bats.

(2) Thomas, op. cit. (2) XIV, p. 105, 1894. — 12 species, of which 9 were bats, one — *Pteropus modiglianii* — being new.

(3) See Vinciguerra, Rettili e Batraci di Engano, Ann. Mus. Civ. Genov. (2) XII, p. 519, 1892.

(4) The agreement of Sipora with Java in the single item of *Tupaia ferruginea hypochrysa* should have a passing reference here.

throughout the chain the whole way from the Nicobars to Christmas Island.

1. ***Semnopithecus potenziანი***, BONAP.

a. ♂. Si Oban, E. Sipora, Aug. 1894.

b. ♀. Sereinu (Sipora), May 1894.

Male. Tail 580 mm.; hind-foot 160.

Female. > 570 > > 148.

Although not new, this monkey is perhaps the most interesting of Dr. Modigliani's captures, for its present occurrence really represents the re-discovery of a lost species, lost that is to say so far as any definite knowledge of its locality is concerned, while in itself the animal is one of the most striking and beautiful of the genus, as may be seen by Peters's excellent figures of the Berlin specimens (1).

The history of the species has been briefly given by Mr. Blanford (2), to whom personally I owe the first suggestion as to the identity of the Mentawai Monkey with it. I do not however agree with him that the name *potenziანი* cannot stand, especially after Peters's distinct identification of "*S. chrysogaster*," with it, and propose therefore to use the earlier name. Even the name *chrysogaster* itself is not very suitable to a red-bellied animal.

As to the important point of the typical locality Blanford says "I could not learn anything in Berlin of the original collector, although on the stand, besides the locality, is the name Prof. Stempel. The circumstance that so beautifully coloured and conspicuous a species has not been noticed again, tends to raise some doubt as to the species really occurring in Tenasserim.,"

The doubt expressed by Mr. Blanford appears to me to be so much strengthened by the discovery of the species in Sipora, an island whose mammals are in no other respect like those of Tenasserim, that I would for the present provisionally look

(1) MB. Ak. Berl. 1879, p. 832, pl. IV. B.

(2) Mamm. Brit. Ind. p. 38, 1888.

upon the species as peculiar to the Mentawai Islands, whence an accidental specimen, perhaps in captivity, where its young may have been born, may have found its way into the hands of Prof. Strempel or whoever was the collector of the Berlin examples.

As compared to other Malayan species, *S. potenziiani* seems to be most nearly allied to *S. hosei* and *S. everetti*, with which alone it shares the absence of any forwardly directed supraorbital or occipital hairs, combined with the presence of a well defined sagittal hair crest.

2. **Macacus nemestrinus**, L. (1)

a. imm. ♂. Si Oban.

3. **Pteropus vampyrus**, L.

a. b. ♂. Si Oban. Apr. May 1894.

4. **Pteropus hypomelanus**, TEMM.

a. ♂. Si Oban. Aug. 1894.

5. **Cynocephalus marginatus**, GEOFF.

a.-n. 14 specimens. Si Oban, May 1894.

6. **Hipposiderus diadema**, GEOFF.

a. ♀. Sereinu (Sipora) May 1894.

7. **Hipposiderus galeritus**, CANT.

a. b. ♀. Simatobe, N. Sipora. July 1894.

(1) By a pure but very lucky accident the familiar generic name of *Macacus* is not superseded by *Pithecus*, E. Geoff. and G. Cuv. (Mag. Encycl. III, p. 462, 1795) as I had until now supposed would prove to be the case. It so happens that under the heading of "Genre IV. Macaque. — *Pithecus* . . .", the first species named is "*Simia veter* . . .", which should therefore be looked upon as the type. This species, however, Mr. Blanford (P. Z. S. 1887, p. 622) has shown to be indeterminable, even generically, so that, with its type, *Pithecus* may be consigned to the limbo of unrecognisable names.

8. **Kerivoula whiteheadi**, THOS. (?)

a. Sereinu (Sipora). May 1894.

This specimen is unfortunately young, having its finger joints unossified, and its milk incisors still in place. It bears however such a strong resemblance to *K. whiteheadi*, just recently described from Luzon (1), that in spite of the difference in locality, I think it best for the present to refer it to that species, although adult specimens may hereafter show it to be different.

9. **Kerivoula hardwickei**, HORSE.

a. ♀. Si Oban, May 1894.

10. **Emballonura semicaudata**, PEALE.

a. b. ♂. Sereinu, Sipora, May 1894.

c. e. ♂. Si Oban, May and July 1894.

The occurrence of this species in recent years in Borneo, Mergui, Pulo Nias, the Mentawai Is. and Engano contrasts curiously with the strictly Polynesian range given in Dobson's Catalogue, a fact which has already struck Dr. Modigliani himself; see his Pulo Nias paper.

11. **Tupaia ferruginea hypochrysa**, THOS. (?)

a. b. 2 ♀. Si Oban. Apr. May 1894.

a. Head and body 180 Tail 137 Hind-foot 42.5

b. » » 163 » 135 » 42.3.

These specimens agree precisely in the beautiful golden colouration of their chests with the specimen described in the

(1) Ann. Mag. N. H. (6) XIV, p. 460, Dec. 1894.

(2) Subsp. nov. Similar to *T. ferruginea typica* in all respects, except that the throat and chest, instead of being dirty olive yellowish, are a rich golden colour, almost "orpiment orange", of Ridgway. Upper surface of hands and feet black.

Hab. Java. Coll. Henry Blyth 1856.

Type. B. M. 86.7. 2. 12.

The striking difference in colour between this Javan specimen and ordinary Sumatran examples of *T. ferruginea* was long ago noticed, but until other specimens came to confirm it, I did not dare to describe the form merely on a single specimen. Now however not only have Dr. Modigliani's two specimens the same golden chests as the type, but Dr. Jentink tells me that the one Javan example at Leyden "has its throat and chest brighter than Sumatran ones..."

foot-note, which was collected in Java in 1856. Their hands and feet are also similarly black. In fact the only difference that I can see is that their tails are coloured very much like the body, while that of the type is rather greyer.

The occurrence of this golden-chested *Tupaia* in the Mentawai Islands is very interesting, as it emphasizes their distinctness from Sumatra, where a different form is found, while in its agreement with a Javan animal it presents the only instance in the collection where a non-volant Mentawai species, not widely distributed over the archipelago, yet agrees with one found elsewhere.

12. **Paradoxurus** sp.

a. young. Si Oban, July 1894.

It is unfortunate that this specimen is quite young, as judging by its curious golden grey colour, entirely without markings, it might possibly be something of interest. It is however quite impossible to work it out with any certainty, as it is so young that all the milk teeth are still in position. Dr. Modigliani obtained a specimen of the common Malay Palm civet, *P. hermaphroditus*, in Engano, and it is not impossible that the present animal is merely one of the pale unmarked varieties recorded by Anderson and Blanford as occasionally occurring in that species.

13. **Pteromys nitidus**, DESM.

a. ♂. Si Oban. Apr. May 1894.

14. **Sciuropterus lugens**, sp. n.

a.-h. 2 ♂ 6 ♀. Si Oban. July 1894.

Measurements of co-types:

	Head and body	Tail	Hind-foot	Ear
♂	230	210	45	21.5
♀ (1)	230	215	41	20

(1) Measured before skinning.

Skull-dimensions (♀) Basal length 43; greatest breadth 30.2; nasals  $15 \times 8$ ; interorbital breadth 10.2; palate length from henselion 21.7; diastema 12; length of upper molar series, excluding p. 3, 9. 4.

♂. preserved in spirit in Genoa Museum; ♀, skinned, now in British Museum.

A large species of a uniformly dark colour above and below.

Size large, though less than in *S. hageni* Jent., or *S. nigripes* Thos. Fur soft and thick, mainly composed of the woolly underfur. Cheeks on each side, just below the posterior canthus of the eye, with a small projecting wart bearing three or four stiffish bristles; aural region with soft hair tufts, although these are little prominent owing to the uniformly dark colour of the fur; ears themselves small, laid forward in a spirit specimen they do not reach to the posterior canthus of the eye; in outline they are much narrowed above, having a marked concavity at the middle of their outer margins; their substance naked terminally and internally, but the basal lobe of the outer margins is much thickened and provided with a distinct hair tuft, and the internal base is also tufted.

Colour of whole animal, above, below, on ears, limbs, paraclype and tail uniform smoky brownish black, nearest to, but darker than, Ridgways "seal-brown",. The only break to the general uniformity is that some specimens have a certain number of white hairs on the middle line of the chest; these are present in the male and at their maximum in the female co-type, in other specimens they are wholly absent.

Hind-feet short and unusually broad; their soles hairy for their proximal half-inch, naked terminally, with broad, low, and little defined pads. Tail broad, oval in section and only indistinctly distichous.

Skull with a narrower form and more elongate muzzle than usual; postorbital processes long and slender; bullæ low and flattened, just as in *S. hageni*, not appearing on the back of the skull.

Cheek-teeth in structure apparently very much as in *S. genibarbis*, and, to a less extent, in *S. hageni*; their form short and broad; p 3 present, oval in section.



This striking species needs no detailed comparison with any of its congeners, as its uniform sombre colouration readily distinguishes it from all except two. These two which more or less agree with it in colour are *Pteromys tephromelas* and *phaecomelas* of Günther, shown by Major <sup>(1)</sup> to have *Sciuropterus* — and not *Pteromys* — like molars, but they are both so much larger that no confusion could possibly take place between either of them and *S. lugens*.

As to its real affinities there is I think little doubt that it is most nearly allied to *S. genibarbis* and *S. hageni*, as in tooth and bulla structure it is not very far from either of them; its bullæ are in fact exactly as in the latter and therefore very different from the bulbous bullæ of most other species. As to its molar-structure, it will certainly fall into the same group as *S. genibarbis*, whenever the proper revision of the genus takes place for which Dr. Forsyth Major has paved the way.

With the unimportant exception of the amount of white on the chest, there is practically no variation among the series of eight specimens brought home by Dr. Modigliani.

15. ***Sciuropterus aurantiacus***, WAGN. (?)

a. ♀. Si Oban. Apr. 1894.

The single specimen which with some doubt I refer to this species is unfortunately not in very good condition, and is also still in the grey phase of pelage, so that it is difficult to be quite certain of its determination. Wagner's species was originally described from Banka.

16. ***Sciurus melanogaster***, sp. n.

12 ♂ and ♀. Si Oban, April-July 1894.

Measurement of co-types:

♂. Head and body 210 Tail 175 Hind-foot 50 Ear 18

♀.        "        200   "   178       "   47   "   17.

Skull of ♀ co-type: — basal length 44.5; greatest breadth 31; nasals 16 × 8; interorbital breadth 18; palate from hensenion 22.6; diastema 12.2; upper molar series, excluding p. 3 9.4.

(1) P. Z. S. 1893, p. 193

General characters as in *S. erythraeus* and *S. castaneiventris*, but belly black.

Size and colouration of upper parts, outer sides of limbs and tail almost exactly as in dark examples of *S. castaneiventris*, but the cheeks and ears are nearly or quite black, the upper sides of the feet are blackish to the wrists and ankles, and the terminal hairs of the tail are similarly grizzled to those of the base. Whole of under surface, and inner sides of limbs dark smoky black, with a few scattered white hairs intermingled. Foot very broad and short; the proximal third of its sole hairy. Mamme only four in number, one pair ventral and one pair inguinal.

Skull and teeth apparently not distinguishable from those of *S. castaneiventris*; p 3 well developed, cylindrical.

This peculiar species is evidently closely allied to *S. erythraeus* and *S. castaneiventris*, but its black belly readily distinguishes it from either of them, as from every other known species of the genus.

#### 17. *Sciurus fraterculus*, sp. n.

*a-d.* 4 ♂. 3 Sereinu (Sipora), May 1894 and 1 Simatobe July 1894.

Measurements of co-types:

<i>a</i>	Head and body	106	Tail	77	Hind-foot	27.4	Ear	11
<i>b.</i>		109		73		27		10.

Skull of *a.* Basal length 28; greatest breadth 20.3; nasals  $9.8 \times 5.3$ ; interorbital breadth 12; diastema 8; length of upper molar series, excluding p.<sup>3</sup> (from specimen *b*) 5.0.

A little species, coloured like *S. tenuis* and *murinus*, but smaller than either of them.

Size very small; ears low and rounded. General colour a finely grizzled brownish rufous, perfectly uniform on the upper surface, outer sides of limbs and whole of tail: no lighter orbital rings; cheeks and thighs rather more rufous; hair of under-surface slaty grey basally, their terminal halves washed with pale rufous white; line of demarcation on sides not strongly marked. Hands and feet grizzled, like body.

Skull closely resembling in shape that of *S. tenuis*, from which it mainly differs by its much smaller size. Cheek-teeth five, the small p 3 cylindrical.

This little species is probably most nearly allied to *S. tenuis*, from which it may be distinguished by its smaller size and more uniform colour. In some respects it resembles *S. murinus* of Celebes, but has not nearly so long a tail as that animal.

#### 18. *Mus siporanus* sp. n.

*a-d.* 4 ad. ♂. Sereinu (Sipora), May 1892.

	Head and body	Tail	Hind-foot	Ear
<i>a.</i>	282	301	55	28 × 21
<i>b.</i> (¹)	260	305	52	27 × 20
<i>c.</i>	252	318	52	25 × 19
<i>d.</i>	255	304	51	28 × 19.

Skull dimensions of *b.*: basal length 52.7; greatest breadth 28.6; nasals, length 23.3; interorbital breadth 10.1; interparietal 8 × 14; palate length from hensenion 27; diastema 16.8; anterior palatine foramina 8.2; length of upper molar series 10.

*a* in spirit and *b*, skinned from spirit, selected as co-types, the former now in the Genoa and the latter in the British Museum.

A very large and handsome species belonging to the group with white-tipped tails, and with a general resemblance to *M. macleari*, Thos. (²) from Christmas Island.

Size large; form thick and heavy, decidedly more so than in the allied species. Fur coarse and harsh, even thinly spinous, especially in the middle of the back; no longer piles mixed with the fur. General colour coarsely grizzled rufous, heavily lined with black, the tips of the underfur rufous, while those of the longer straight hairs are deep black; the bases of both sorts of hairs whitish. The black-tipped hairs are as usual most numerous on the back, and especially on the rump and round the base of the tail, these regions being in fact wholly black. Whole of head also black, or blackish brown, the rufous of the sides only extending forwards to just below the ear. Even the

(¹) Before being skinned.

(²) P. Z. S. 1887, p. 513, pl. XLII (animal).

muzzle and upper lips are also black. Undersurface throughout white to the bases of the hairs, but in all the specimens the centre of the chest and belly is much soiled with a glandular secretion of some sort, so that in some cases, as for instance in specimen *c*, the whole of the chest, throat, and anterior half of the belly is wholly dirty rufous brown; but the natural colour is clearly white, and young or female specimens would no doubt be pure white below. Line of demarcation on sides very sharply marked. Shoulders and hips grizzled rufous, like the sides. Arms from elbows blackish brown, which colour runs on to the metacarpals, but the digits are whitish and the edges of the metacarpus and the whole inner side of the arm are white in continuation with the white of the chest. Behind however, although the lower leg and upper side of foot are similarly black, the white of the belly sharply ends half way down the tibiae, the black passing the whole way round the limb below this point. Level with this same point the white of the belly ends abruptly in the middle line, such hairs as there are on the enormously swollen testicles being black. Hair at bases of posterior, as of anterior, claws white. Soles naked, with the usual six large rounded pads; fifth hind toe, without claw, reaching to the middle of the first phalanx of the fourth. Ears of medium size, rounded, laid forward in a spirit specimen they reach just to the middle of the eye; practically naked, their few fine scattered hairs brown. Tail very long, thick, coarsely ringed, the scales averaging only about 7 or 8 to the centimetre; proximal half black, terminal half white all round, the middle portion much mottled with the two colours; fine hairs of tail following the colouration of the scales.

Skull broad and rounded; zygomatic plate less projected forwards than in *M. macleari*; supraorbital ridges of average development for the size of the animal, not specially overhanging; interparietal large. Anterior palatine foramina short; posterior palate ending opposite the back of  $m^3$ ; posterior nares widely open; bullæ low and small. Teeth normal.

This handsome species is perhaps less closely allied to *Mus*

*macleari* than appears at first sight, for within the group of large species with white tipped tails, of which a short synopsis was given in the original description of that animal, it differs by most of the characters which separate the species from one another, notably by its black head and rump, its non-possession of elongated dorsal bristles, and its short palatal foramina. The other species there mentioned are all more or less greyish instead of rufous, while the additional one since described by Dr. Jentink from Flores, *Mus armandvillei* (1), is readily distinguished from the present and every other species by its enormous size.

It is unfortunate that all the specimens of *Mus siporanus* are males, so that I am unable to record the very important character of the mammary formula.

#### 19. *Mus rajah*, THOMAS.

a. ♀. Sereinu (Sipora) May 1894.

In the possession of a bright rufous collar this specimen agrees with the Kina Balu skins mentioned in my recently published description of the species (2), rather than with the typical lowland ones. It shows therefore that I should have been wrong to describe the collared variety as a species or subspecies peculiar to that mountain, as I had at first believed to be necessary.

#### 20. *Mus* sp.

a-c. ♂ 2 ♀. Sereinu (Sipora) May 1894.

One of the ordinary dark coloured forms belonging to the *Mus rattus* group, with  $2-3 = 10$  mammae. Exact determination within this group is for the present entirely out of the question, owing to the large number of described species and the paucity of proper material.

(1) Weber's Zool. Ergebn. II, p. 78, 1892.

(2) Ann. Mag. N. H. (6) XIV, pp. 451 and 454. Dec. 1894.